# PRESS RELEASE

**3 NOVEMBER 2025 | FOR IMMEDIATE RELEASE**

## Social interactions help to form lasting memories, NUS Medicine study finds

***New findings underscore the importance of regular social interactions in life, shedding light on the strong link between loneliness and sustained social isolation to memory decline and conditions such as dementia, and why social and memory impairments often co-occur in psychiatric disorders.***

*Singapore, 3 November 2025* – Researchers from the Yong Loo Lin School of Medicine, National University of Singapore (NUS Medicine), have uncovered a previously overlooked role of the hippocampus in shaping memory, revealing how social interactions can enhance the brain's ability to convert fleeting experiences into lasting memories.

The hippocampus, often described as the brain's "seat of memory", plays a central role in deciding what we remember or forget. Within this complex structure lies a little-studied region known as CA2, which NUS Medicine scientists have now shown acts as a "social spark plug".

Published in the *Proceedings of the National Academy of Sciences (PNAS)*, their findings demonstrate that CA2 activity during social interaction triggers memory-enhancing signals to another hippocampal region, CA1—the brain's "memory converter".

"Social interaction is not just a feel-good activity," said Associate Professor Sreedharan Sajikumar, principal investigator of the study, from the Department of Physiology, and Healthy Longevity Translational Research Programme (TRP), NUS Medicine. "It is a biological necessity that directly changes how the brain works. These processes create not only the memories we cherish, but also the meaningful bonds that define us. Being socially active is hardwired into our neuronal circuitry."

In their laboratory study which was conducted using chemogenetics—a technique that allows researchers to temporarily switch off specific brain cells—the team found that inhibiting the activity of the brain's CA2 region prevented the usual memory boost conferred by social interactions.

Further investigation revealed that CA2 neurons enhance CA1's ability to form long-term memories through metaplasticity, a process that strengthens the brain's "memory proteins".

This memory-enhancing effect, however, is time-limited, underscoring the importance of regular social interactions. The findings shed light on why loneliness and sustained social isolation are strongly linked to memory decline and conditions such as dementia, and why social and memory impairments often co-occur in psychiatric disorders.

"While we are learning more about the unique role of CA2, we also should appreciate its role within the hippocampus," said lead author Dr Mohammad Zaki Bin Ibrahim, a former NUS Medicine graduate student, who is currently pursuing postdoctoral research in the United States. "Our findings help explain why loneliness and sustained lack of social contact are linked to memory decline. By understanding how social experiences shape the hippocampus, therapies can be designed to "rescue" memory in vulnerable groups and even promote resilience. These could include novel drugs, brain stimulation methods, or lifestyle-based interventions that keep this CA2-to-CA1 connection, and by extension the whole brain, active."

The research suggests that strengthening CA2-to-CA1 connections could offer new strategies to "rescue" memory function in vulnerable groups, such as the elderly, and to promote resilience against dementia and other memory-related conditions. Potential future interventions may include targeted drugs, brain stimulation, or lifestyle-based therapies that harness the memory-boosting power of social interactions.

This work was carried out in collaboration with Dr Jai S. Polepalli from the Department of Anatomy, NUS Medicine, and Prof Thomas Behnisch from Fudan University, China.

---

For media enquiries, please contact:

**Gladys SIM**
Manager, Communications,
Yong Loo Lin School of Medicine,
National University of Singapore
DID: +65 9007 1322
Email: gladyssim@nus.edu.sg

**About National University of Singapore (NUS)**

The National University of Singapore (NUS) is Singapore's flagship university, which offers a global approach to education, research, and entrepreneurship, with a focus on Asian perspectives and expertise. We have 15 colleges, faculties, and schools across three campuses in Singapore, with more than 40,000 students from 100 countries enriching our vibrant and diverse campus community. We have also established more than 20 NUS Overseas Colleges entrepreneurial hubs around the world.

Our multidisciplinary and real-world approach to education, research and entrepreneurship enables us to work closely with industry, governments, and academia to address crucial and complex issues relevant to Asia and the world. Researchers in our faculties, research centres of excellence, corporate labs and more than 30 university-level research institutes focus on themes that include energy; environmental and urban sustainability; treatment and prevention of diseases; active ageing; advanced materials; risk management and resilience of financial systems; Asian studies; and Smart Nation capabilities such as artificial intelligence, data science, operations research, and cybersecurity.

For more information on NUS, please visit http://www.nus.edu.sg/

**About the NUS Yong Loo Lin School of Medicine (NUS Medicine)**

The NUS Yong Loo Lin School of Medicine is Singapore's first and largest medical school. Our enduring mission centres on nurturing highly competent, values-driven, and inspired healthcare professionals to transform the practice of medicine and improve health around the world.

Through a dynamic and future-oriented five-year curriculum that is inter-disciplinary and inter-professional in nature, our students undergo a holistic learning experience that exposes them to multiple facets of healthcare and prepares them to become visionary leaders and compassionate doctors and nurses of tomorrow. Since the School's founding in 1905, more than 12,000 graduates have passed through our doors.

In our pursuit of health for all, our strategic research programmes focus on innovative, cutting-edge biomedical research with collaborators around the world to deliver high impact solutions to benefit human lives.

The School is the oldest institution of higher learning in the National University of Singapore and a founding institutional member of the National University Health System. It is one of the leading medical schools in Asia and ranks among the best in the world (Times Higher Education World University Rankings 2025 by subject and the Quacquarelli Symonds (QS) World University Rankings by subject 2025).

For more information about NUS Medicine, please visit https://medicine.nus.edu.sg/